

Borehole

# 51-05-10

Log Event A

## Borehole Information

Farm : <u>TX</u>	Tank : <u>TX-105</u>	Site Number : <u>299-W15-144</u>
N-Coord : <u>41.785</u>	W-Coord : <u>75.783</u>	TOC Elevation : <u>673.09</u>
Water Level, ft :	Date Drilled : <u>6/30/1971</u>	

## Casing Record

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>100</u>	

## Borehole Notes:

According to the driller's records, this borehole was not perforated or grouted. The driller's record shows a starter casing installed to 13 ft. There is no indication whether the casing was pulled, whether grout was added, or if the starter casing was deepened. The top of the casing is approximately 0.2 ft above grade. The casing thickness is presumed to be 0.280 in., on the basis of published thickness for schedule-40, 6-in. steel tubing.

## Equipment Information

Logging System : <u>2</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>11/1995</u>	Calibration Reference : <u>GJPO-HAN-3</u>	Logging Procedure : <u>P-GJPO-1783</u>

## Log Run Information

Log Run Number : <u>1</u>	Log Run Date : <u>4/1/1996</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>99.5</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>20.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Log Run Number : <u>2</u>	Log Run Date : <u>4/2/1996</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>21.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



Spectral Gamma-Ray Borehole  
Log Data Report

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### Analysis Information

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Analyst : S.D. Barry

Data Processing Reference : P-GJPO-1787

Analysis Date : 9/30/1996

#### Analysis Notes :

This borehole was logged in two log runs. The pre- and post-survey field verification spectra met the acceptance criteria established for the peak shape and detector efficiency, confirming that the SGLS system was operating within specifications. The energy calibration and peak-shape calibration from these spectra were used to establish the channel-to-energy parameters used in processing the spectra acquired during the logging operation.

Casing-correction factors for a 0.280-in.-thick steel casing were applied during analysis.

Cs-137 was the man-made radionuclide identified in this borehole. The presence of Cs-137 was measured almost continuously from the ground surface to about 34 ft and intermittently to the bottom of the borehole. The maximum Cs-137 concentration was about 10 pCi/g at ground surface. Concentrations in the remainder of the borehole were less than 1 pCi/g.

The shift in U-238 between log runs is most likely radon venting up the borehole.

Additional information and interpretations of log data are included in the main body of the Tank Summary Data Report for tank TX-105.

#### Log Plot Notes:

Separate log plots show the man-made (e.g., Cs-137) and the naturally occurring radionuclides (e.g., K-40, U-238, and Th-232). The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

A combination plot includes both the man-made and natural radionuclides, in addition to the total gamma derived from the spectral data and the Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data. No attempt has been made to adjust the depths of the gross gamma logs to coincide with the SGLS data.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the MDL. The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.